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Taxation of shareholder capital gains and the choice of payment method in takeovers

Martin Bugeja and Raymond da Silva Rosa*

Abstract—From December 1999, shareholders who disposed of shares in Australian takeovers in exchange for scrip could elect to defer capital gains taxation until the disposal of the shares received. We investigate payment method choice by acquiring firms before and after this regulatory change to assess whether target shareholder capital gains tax liabilities became an important factor considered in choosing the form of payment. The results show that, subsequent to the regulatory change, there is a significantly higher probability that equity will be offered as consideration where target shareholder capital gains are greater. This finding confirms the importance of shareholder level taxation in explaining corporate acquisition structure and adds to previous European and US evidence on factors associated with payment method choice in takeovers.

Keywords: capital gains taxation; mergers and acquisitions; method of payment

1. Introduction

The association between shareholder level taxation and the structure of corporate takeovers has received a great deal of attention in prior research. In the UK, where equity is received as payment in a takeover, section 135 of the *Taxation of Chargeable Gains Act 1992* allows target firm shareholders to defer any capital gain to the subsequent disposal of the acquiring firm's shares. In contrast, where payment is received as cash, target shareholders are immediately taxable on any capital gain.[1] Similar taxation arrangements exist in the US under section 368 of the Internal Revenue Code. The immediate taxable status where cash is offered as payment has led to the expectation (Erickson, 1998 and Dinnison, 2000) that acquiring firms will be less likely to use cash where target shareholders have a greater liability for capital gains tax (CGT). However, previous studies in Europe (Faccio and Masulis, 2005) have been unable to find any association between the choice of payment method and the taxation treatment of target shareholders. Similarly, US studies have found no association between the acquiring firm's method of payment choice and proxies for the size of target shareholder capital gains (Erickson, 1998; Ayers et al., 2004). Ayers et al. (2004) do, however, document a greater use of equity payment during periods of higher CGT rates in the US but find no association with proxies for the size of target shareholder capital gains.

In contrast to the US and UK and prior to 10 December 1999, in Australia the *Income Tax Assessment Act 1997* imposed an immediate CGT liability on shareholders who disposed of their shares in response to a takeover offer irrespective of the type of consideration received. From 10 December 1999, however, target shareholders have been permitted to elect to defer the payment of CGT when equity is received as part of a takeover offer until the subsequent disposal of those shares. This change in regulatory environment provides a unique opportunity to test whether there is a shift in the structure of corporate acquisitions in response to a modification in the taxation treatment of shareholders. Specifically, this study examines the relationship between target shareholder capital gains and the method of payment choice before and after this change in the regulatory environment. For takeovers announced during the earlier regime, we expect to find no association between the choice of payment method and shareholder capital gains. Subsequent to 10 December 1999, however, we expect to find that the probability that target shareholders are offered equity as consideration will increase with the level of target shareholder capital gains. To test this hypothesis,

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[1] A discussion of the UK capital gains treatment of target firm shareholders is available in HM Revenue and Customs Help Sheet IR285: 'Share Reorganisations, company take-overs and capital gains tax' available at: http://www.hmrc.gov.uk/helpsheets/IR285.pdf.

we use two measures to approximate target shareholder capital gains. Consistent with prior research in the US (Erickson, 1998; Ayers et al., 2004) the first proxy measures capital gains as the share price 20 days prior to the takeover announcement less the average share price over the prior two years. The second estimate of capital gains is calculated as the difference between the share price 20 days prior to the takeover announcement and the share price two years previous. This capital gain is then either indexed for inflation or a capital gains discount of 50% allowed under section 115-100 of the *Income Tax Assessment Act 1997*.

For the first measure of target shareholder capital gains our results show that, after the introduction of CGT rollover, there is a significant reduction in the probability that cash and mixed payment forms will be offered as consideration in takeovers with higher estimated target shareholder capital gains. The second measure of capital gains, however, provides insignificant results. When we re-estimate our results only for target firms where the estimated holding period is between zero and three years, we obtain significant results indicating a shift from cash to equity payment for takeovers with higher target shareholder capital gains for both proxies of target shareholder capital gains. For mixed payment forms, however, the results still only remain supportive of our hypothesis using the first capital gains measure. Our findings significantly contribute to the literature as it is the first study that documents a significant association between proxies for the size of target shareholder capital gains and the choice of payment method. This study thus provides evidence on the importance of shareholder level taxation for the acquisition structure of publicly listed firms. This finding also adds to the factors that have been shown in prior studies to explain payment method.

This paper also extends our knowledge as it is the first to examine comprehensively the method of payment choice by Australian acquirers. As such, the study provides evidence on whether similar factors determine payment form as previously documented in Europe and the US. The findings show that an acquiring firm is more likely to offer cash or a mixed payment form when it has a higher free cash flow or a greater toehold stake in the target firm. Furthermore, target firms with a higher market-to-book ratio are more likely to be offered equity payment, consistent with the presence of information asymmetry and a greater uncertainty over the expected synergy that will arise from the takeover. The results also indicate that mixed payment forms are offered more frequently in friendly takeovers and to target firms of greater size.

The remainder of this study is organised as follows. The next section describes the taxation treatment of capital gains in Australia and summarises prior research relevant to this study. Section 3 develops the model tested in the paper, whilst Section 4 describes the sample and presents results. The final section of the paper discusses conclusions and possible areas of future research.

2. Regulation and prior literature

2.1. Taxation of capital gains on share disposals in Australia

The *Income Tax Assessment Act 1997* is the main legislative authority on taxation in Australia with the treatment of capital gains addressed in Chapter 3 of the Act.[2] Under this Act, the disposal of shares acquired after 19 September 1985 results in the shareholder generating a taxable capital gain or loss (section 104-10). Shares acquired prior to this date are not subject to CGT when sold. Any capital gain generated on disposal of the shares is taxable at the shareholder's marginal tax rate, whilst realised capital losses can only be offset against current or future capital gains (section 102-5). For shares acquired on or before 21 September 1999, the capital gain is calculated after indexing the cost of the shares for inflation with the proviso that the shares have been owned for more than 12 months (section 114-1). However, indexation is not available where the shareholders realise a capital loss (section 114-5). Furthermore, subsequent to 21 September 1999, section 114-1 indicates that indexation is no longer available at all. For investments purchased prior to 21 September 1999, indexation has been frozen at the indexed cost measured on 30 September 1999. Replacing the indexation system, shareholders who dispose of their investment after 21 September 1999 are permitted to discount the capital gain if at the time of disposal they held the shares for more than 12 months (section 115-100). The rate of the discount is 50% for individuals and trusts and 33⅓% for superannuation funds and life insurance companies (section 115-100). Shareholders who acquired their interest prior to 21 September 1999 may choose to take the CGT discount or use the frozen indexed cost of the shares when calculating their taxable capital gain (section 114-5).

Prior to 10 December 1999, target shareholders in Australian takeovers were required to pay CGT on shares sold into a takeover irrespective of the form of consideration received. As a result, target shareholders who received equity as consideration were immediately liable to pay CGT. This outcome is in contrast to the UK and US legal environment, which allows shareholders who receive equity as payment in a takeover to defer the taxation until the ultimate sale of the shares received. From 10 December 1999 onwards, target share-

[2] The *Income Tax Assessment Act 1997* is available at: http://law.ato.gov.au/atolaw/index.htm.

holders who, as part of an Australian takeover, exchange the same type of interest (i.e. shares exchanged for shares, or a trust interest for another trust interest) can elect to roll over any capital gain until the ultimate disposal of the interest received as takeover consideration. This election is only available to shareholders if the acquiring firm at the completion of the takeover acquires an ownership interest in the target of at least 80% (sections 124-780 and 124-781). Where target firm shareholders are offered both cash and equity, they can only partially roll over the capital gain.[3]

The roll-over of CGT was introduced because the previous provisions 'were considered an impediment to corporate acquisition activity in Australia'[4] and followed numerous calls from interest groups for taxation reform. For example, a representative of the Securities Institute of Australia, commenting on the taxation of target shareholders who receive scrip under a takeover offer stated, 'not all takeovers add value, but restricting them in this way must be damaging our economy generally' (Main, 1999: 23). It was expected that, subsequent to the reforms, there would be an increase in the use of scrip as payment in takeovers (Dinnison, 2000).

2.2. Shareholder taxation and corporate acquisition structure

Given the immediate taxation of shareholder capital gains where cash is accepted as payment, previous US and European research has investigated if there is a negative association between the use of cash consideration and target shareholder capital gains. Faccio and Masulis (2005) find no association between the method of payment choice in Europe and any target shareholder tax advantage from stock payments. Similarly, Erickson (1998) finds the payment form in the US is unrelated to estimates of the size of target shareholder capital gains. Similar results are reported for the US in Auerbach and Reishus (1988) and Ayers et al. (2004). This later study also examines the method of payment choice over five different CGT regimes in the US. Consistent with shareholder level taxation being an important determinant of acquisition structure, they show that the use of equity payment (i.e. a tax-free acquisition) is greatest in those periods with the highest CGT rates. This association is found to increase with the size of target institutional ownership, consistent with institutions preferring tax deferred consideration. Reporting results from the UK, Franks et al. (1988) find that the proportion of cash-financed acquisitions decreased only over the immediate period after the introduction of capital gains taxation. In a different context, Dhaliwal et al. (2004) find evidence of a higher acquisition price in the purchase of US hospitals where the seller has a greater taxation liability.

3. Factors influencing payment form and empirical method

As bidding firms in a takeover can offer three types of consideration (i.e. cash, equity or mixed payment), we use three variants of a binomial logit model to examine the association between the target shareholder capital gains and the payment method. For the purposes of this study, mixed payment forms are defined as takeovers where shareholders are offered cash and equity as payment or a choice between cash and equity payment. We first compare cash and equity takeovers with the dependent variable (*PAYT*), indicating takeovers where the payment form is exclusively cash (model 1a). In the second variation of the model (model 1b), mixed and equity takeovers are included with *PAYT* denoting takeovers with mixed payment forms. In both these iterations of the model, we expect to find that, subsequent to the introduction of CGT rollover relief there will be an increased probability of equity payment being offered where target shareholders have higher capital gains. The final iteration of the model is estimated with cash and mixed bids with *PAYT* signifying cash takeovers (model 1c). As shareholders in mixed bids are still liable to pay taxation on capital gains relating to the cash component, it is unclear as to whether there will be a shift from pure cash offers to mixed payment forms after the regulatory change.

The independent variables in the payment choice model include tax variables and other controls that have been shown in prior research to influence the method of payment choice. These variables have been grouped broadly into the following categories: taxation-related, target and acquiring firm-related and takeover offer characteristics.

3.1. Taxation-related variables

Target shareholder capital gains are estimated over the two-year period prior to the takeover announcement. Consistent with Erickson (1998) and Ayers et al. (2004), target shareholder capital gains (*CGN20*) are estimated as the share price 20 days prior to the takeover announcement minus the average share price over the prior two years. We also use an alternative measure of the capital gain (*CGNINDEX*) that is calculated for takeovers announced on or before 21 September 1999 by indexing the assumed acquisition cost for inflation. For this purpose, we assume all target sharehold-

[3] The original cost of the shareholding needs to be apportioned to work out the taxable capital gain that relates to the cash component of the consideration.

[4] ' Capital gains tax: scrip for scrip roll-over – questions and answers' – http://www.ato.gov.au/print.asp?doc=/content/18438.htm.

ers purchased their shares two years prior to the announcement date.[5] For the period after 21 September 1999, the estimated capital gain is discounted by 50%. These two measures of target shareholder capital gains will capture any general association between the payment method choice and the size of target shareholder gains.

An interaction variable is employed in the model to determine any impact of the change in taxation arrangements on the form of consideration offered (*CGN20*CHANGE* and *CGNINDEX*CHANGE*). This variable interacts respectively each measure of capital gains with a dummy variable (*CHANGE*) that denotes takeovers announced on or after 10 December 1999. It is hypothesised that this interaction variable will have a significant negative coefficient in models (1a) and (1b). To highlight if the change in capital gains taxation resulted in a shift in payment form that is unrelated to the size of target shareholder capital gains, *CHANGE* is also included in the models.

In Australia, corporations that make a loss for tax purposes do not receive a refund but are entitled to carry forward the loss to offset against taxable income in future years. The deduction of prior year losses is subject to passing either a 'same business test' or a 'continuity of ownership' test (sections 165-5 of the *Income Tax Assessment Act 1997*). The 'continuity of ownership' test requires that shares carrying more than 50% of voting, dividend and capital rights be owned by the same shareholders from the start of the financial year that the tax loss was incurred to the end of the financial year that the loss is to be offset against taxable income. The 'same business test' requires that the entity is carrying on the same business in the claim year as it was at the start of the loss year. As shown in Erickson (1998), where the acquirer has a carry forward tax loss, the firm is less likely to value further interest deductions and, as such, it is less likely to offer cash as payment. Ayers et al. (2004), however, find that losses do not explain payment choice. Carry forward tax losses are collected from the acquiring firm's financial statements for the year-end prior to the takeover announcement. Similar to Ayers et al. (2004), *NOL* is defined as the carry forward tax loss multiplied by the applicable corporate tax rate, divided by the acquiring firm's market value of equity at the financial year-end before the takeover announcement. This variable is hypothesised to have a negative coefficient.

As institutional investors generally have lower tax rates than other shareholders, the amount of CGT payable will be less than for individual shareholders.[6] Accordingly, the demand for tax-deferred consideration is expected to decrease at higher levels of target institutional ownership. Ayers et al. (2004), however, find that the use of equity payment is positively associated with the ownership of institutions in the target firm. Institutional ownership in the target firm is estimated from the Top 20 shareholder list released at the financial year-end prior to the takeover announcement (*TGTINST*).[7] The model also includes an interaction variable between *TGTINST* and the change in CGT treatment (*TGTINST*CHANGE*). This interaction variable measures whether the relationship between target institutional ownership and the payment method changes in the period after 10 December 1999. For example, if institutional owners are able to pressure bidding firms to offer tax-deferred consideration, it is expected that target firms with greater institutional ownership will be more likely to be offered equity payment after the change in taxation arrangements.

3.2. Target and acquiring firm characteristics

The financial condition of the bidder will influence payment choice. Acquisitions financed through cash typically require firms to obtain additional debt finance. The ability of the acquiring firm to support further debt will depend on the bidder's current leverage and cash-flow, as well as the financial condition of the target. Where the bidder can gain access to target free cash flow or target unused debt capacity, it has a greater ability to finance the acquisition with cash. As predicted, Faccio and Masulis (2005) find that greater leverage increases the use of equity payment for European bidders. Mayer and Walker (1996) and Martin (1996), however, find leverage does not explain payment method choice in the US.[8] In fact, Mayer and Walker (1996) and Martin (1996) document that, in the US, the use of cash is positively related to proxies for bidder firm free cash flow. Free cash flow for the acquiring (*BIDFCF*) and target firm (*TGTFCF*) is measured as cash flow from operations less dividends paid, scaled by total assets as reported for the financial year prior to the takeover announcement. Leverage is measured using the debt-to-equity ratio for the target (*TGTDE*) and bidding firms (*BIDDE*) calculated at

[5] Consumer price index inflation data is available at the Australian Bureau of Statistics website: http://www.abs.gov.au/.

[6] The current maximum income tax rates in Australia are 47% for individuals, 30% for companies and trusts and 15% for complying superannuation funds. Sourced from the Australian Taxation Office at: http://www.ato.gov.au/businesses/pathway.asp?pc=001/003/019&mfp=001/003&mnu=601#001_003_019.

[7] Similar to Henry (2005), we define institutional shareholders as: life and non-life insurance companies, fund management companies, banks, superannuation funds and investment companies. Nominee shareholdings are not included unless it is indicated that they are institutional accounts.

[8] Chaney et al. (1991) and Erickson (1998) find US acquirers with higher leverage use cash, consistent with an attempt to maintain their existing capital structure.

the end of the financial year before the takeover announcement. It is expected that the probability of cash being offered will be positively related to the target and the acquiring firm's free cash flow, whilst negatively associated to the target and the bidding firm's leverage.

The cost of debt financing will influence the ability and attractiveness of making an acquisition using cash. It is expected that in periods of relative high interest rates, bidding firms will prefer to finance an acquisition using equity. The cost of corporate borrowing is proxied using the indicator lending rate for the month of the takeover announcement (*IRATE*) sourced from the Reserve Bank of Australia Indicator Lending Rates.[9]

Bidders with higher levels of insider ownership have been found in the US to make greater use of cash financing to avoid diluting the ownership rights of existing shareholders (Amihud et al., 1990; Mayer and Walker, 1996; Yook et al., 1999). Faccio and Masulis (2005) find that insider ownership in Europe is only related to the use of cash payment at medium levels of insider ownership. The potential for dilution of ownership to explain payment form is measured using the percentage holding of executive and non-executive directors on the board at the time of the takeover announcement (*BIDDIROWN*). This variable is predicted to have a positive coefficient.

Consistent with the arguments of Myers and Majluf (1983), prior research has found that bidders offer equity where the firm's stock is overvalued (e.g. Faccio and Masulis, 2005 in Europe; Da Silva Rosa et al., 2000 in Australia; Mayer and Walker, 1996; Martin, 1996; Erickson, 1998; Emery and Switzer, 1999; and Ayers et al., 2004 in the US). Overvaluation is measured using the acquiring firm's market-to-book ratio (*BIDMB*) calculated at the financial year-end prior to the takeover announcement. We expect this variable to have a negative coefficient in the regression model. Faccio and Masulis (2005) provide an alternative explanation for a negative association between an acquiring firm's market-to-book ratio and cash payment. They argue that this finding is consistent with acquiring firms with greater growth prospects having greater stock attractiveness as merger consideration.

The models of Hansen (1987) and Fishman (1989) argue that, where there is greater information asymmetry regarding the value of the target, equity is more likely to be offered as payment. Similarly, an acquirer is more likely to offer equity where they are uncertain as to the potential synergy that may arise from a takeover. Information asymmetry has been proxied in previous research using the absolute size of the target, as well as the relative size of the target to the bidder. In Australia and Europe, as predicted, Da Silva Rosa et al. (2000) and Faccio and Masulis (2005) respectively find that a larger relative size is associated with more frequent use of equity payment. In contrast, the relative size of the target to the bidder has generally been found to be insignificant in explaining payment choice in the US (see Martin, 1996; Mayer and Walker 1996; and Emery and Switzer 1999). We proxy for information asymmetry and uncertainty over the value of the target by including the following variables in the payment choice model: target firm size (*TGTSIZE*), target market-to-book ratio (*TGTMB*) and the relative size of the target to the bidder (*RELSIZE*). Each variable is measured at the financial year-end prior to the takeover announcement. Size is measured using the natural logarithm of the target firm's market capitalisation. All three variables are expected to have a negative coefficient in the payment choice model.

When the bidder has a greater initial toehold stake in the target, the consideration required to finance the acquisition from current cash reserves decreases. It is expected, therefore, that the toehold stake will be positively related to the likelihood of a cash bid. The toehold interest (*TOEHOLD*) of the acquiring firm in the target at the time of the takeover announcement is added to the payment choice model.

3.3. Takeover offer characteristics

Fishman (1989) and Mayer and Walker (1996) argue that cash is used as payment to obtain a competitive advantage in the bidding process. Where the takeover is hostile and/or there is an expectation that competing bidders may enter into a bidding contest, it is important that the takeover be completed quickly. Consistent with this expectation, Mayer and Walker (1996) and Ayers et al. (2004) find that cash is used more frequently in US hostile takeovers,[10] whilst Erickson (1998) reports that a cash offer is more probable in the US where there are multiple acquirers. Faccio and Masulis (2005), however, find that takeover hostility does not explain payment choice in Europe. Target firm hostility and the presence of multiple bidders are controlled using binary variables. *DIRREC* is a variable denoting takeovers where the initial recommendation of the target board is to recommend acceptance, whilst *MULTIPLE* indicates takeovers where competing bidders exist for the target firm. Both variables are predicted to have positive coefficients.

The complete logit regression model of method of payment choice is as follows:

[9] Available at: http://www.rba.gov.au/Statistics/

[10] The use of cash accelerates the process as acquiring firm shareholders in the US need to approve the issue of stock in equity bids.

$$PAYT_i = \alpha_i + \beta_1 CGN_i + \beta_2 CGN{*}CHANGE_i + \beta_3 CHANGE_i + \beta_4 NOL_i + \beta_5 TGTINST_i + \beta_6 TGTINST{*}CHANGE_i + \beta_7 TGTDE_i + \beta_8 BIDDE_i + \beta_9 TGTFCF_i + \beta_{10} BIDFCF_i + \beta_{11} BIDDIROWN_i + \beta_{12} BIDMB_i + \beta_{13} TGTMB_i + \beta_{14} TGTSIZE_i + \beta_{15} RELSIZE_i + \beta_{16} TOEHOLD_i + \beta_{17} IRATE_i + \beta_{18} DIRREC_i + \beta_{19} MULTIPLE_i + \varepsilon_{it} \quad (1)$$

The model of payment method choice is estimated separately for cash versus equity takeovers (1a), mixed versus equity takeovers (1b) and cash versus mixed takeovers (1c) using in turn each of the two estimates of target shareholder capital gains (i.e. *CGN* is, in turn, *CGN20* and *CGNINDEX*). Table 1 provides a summary of the variable definitions and measurement in addition to indicating the predicted signs of the coefficients.

4. Data and results

The Connect 4 Mergers and Acquisitions Database was used to identify 435 takeovers announced on the Australian Stock Exchange (ASX) during the period 1996–2003. As capital gains roll-over is only available where the bidder firm acquires at least 80% ownership in the target (sections 124-780 and 124-781 of the *Income Tax Assessment Act 1997*), we restricted the search criteria to takeovers for 100% of the target shares when initially selecting takeovers to be analysed. Additionally, we excluded takeovers where the consideration offered an exchange of non-equivalent interests (e.g. shares for a trust interest). This period encompasses approximately four years pre- and post-introduction of roll-over relief for equity exchange takeovers. Over this timeframe, there was no adjustment to the highest individual marginal tax rate (i.e. 47%). The data required to estimate the regression model (1) was obtained from a number of sources and is summarised in Table 1. Annual reports for bidder and target firms in the year preceding the takeover were used to hand collect accounting information and institutional ownership. Huntley's Aspect FinAnalysis database was used as the source of annual reports. Takeover documents lodged with the ASX were used to collect information on: method of payment, the ownership interest of acquiring firm directors, the recommendation of the target firm board, the toehold interest of the acquiring firm and the presence of competing bidders. Takeover documents were sourced from the Connect 4 Mergers and Acquisitions Database and the Securities Industry Research Centre of Asia-Pacific (i.e. SIRCA) TIFF Images of ASX announcements. Share price data and the average daily trading volume of target firms were collected from the Core Research Database maintained by SIRCA.

To ensure a complete data set was available to estimate the regression model, we excluded those takeovers with missing observations for one or more of the variables. Details of the reasons for the exclusion of takeovers are summarised in Table 2. The main reason for deleting observations lies in the bidding firm's lack of public listing in Australia. After removing takeovers with missing information, we were left with 194 takeovers, which are then used to estimate the payment choice model. This group of takeovers includes both completed and unsuccessful takeover bids, with approximately 65% of takeovers successful.

Table 3 shows the distribution of payment method across the observation period. As hypothesised, there is a reduction in the use of cash payment after the legislative change from 51% to 49% of takeovers and an increase in pure equity payment from 31% to 33% of takeovers. However, *z*-statistics indicate that this change is insignificant. It is also notable that, contrary to expectations, the percentage of acquiring firms using cash increases from 36% in 1999 to 49% in 2000.

Descriptive statistics across payment method for the non-tax variables included in model (1) are provided in Table 4. As expected, bidding firms are more likely to offer equity when the target and acquirer have lower free cash flow. The toehold interest in cash and mixed takeovers are significantly higher than for equity bidders, indicating that bidders are more likely to offer cash (either in whole or part) when the total amount of consideration to be paid is lower. Target firm size is significantly related to payment method with larger firms more likely to be offered mixed consideration followed by cash payment. Inconsistent with the result in Erickson (1998), we find no association between payment method and competing bidders for the target. Target firm leverage does not influence the payment method offered, despite cash bidders having a significantly higher level of indebtedness than equity bidders. Where the target firm board recommends takeover acceptance, the bidding firm is more likely to offer mixed consideration. The results for ownership of acquiring firm directors are inconsistent with expectations as acquiring firms offer equity when directors own a higher percentage of the firm.

In the final row of Table 4, Panel A, we present statistics on the average holding period of target firm shares calculated by dividing the number of issued shares at the time of the takeover announcement by the average daily trading volume over the prior two years (*HOLDPER*). The average holding period does not differ across payment type and ranges between two and three years. This finding indicates that estimating target shareholder

Table 1
Variable definitions and sources

This table provides definitions of the variables used in this study and indicates the source of the data. Share price data was obtained from the SIRCA Core Research database (*SIRCA CRD*). Accounting information and institutional ownership were collected from target and bidding firm annual reports sourced from Huntley's FinAnalysis database (*FinAnalysis*). Information on takeover characteristics and the date of takeover announcements were collected from documents lodged by the target and bidding firms with the ASX. These documents were sourced from either the Connect 4 Mergers and Acquisitions Database (*Connect 4*) or SIRCA Tiff Images of ASX Announcements (*SIRCA ANN*).

Dependent variable	Definition	Data source
PAYT	A binary variable denoting the method of payment. In model (1a) (cash versus equity) and model (1c) (cash versus mixed), the dependent variable denotes takeovers where cash is offered as consideration. In model (1b) (mixed versus equity), the dependent variable denotes takeovers where a mixed payment form is offered.	Connect 4 SIRCA Ann

Independent variable	Definition	Predicted sign	Data source
CGN20	The capital gain of target shareholders calculated as the share price 20 days before the takeover announcement less the average price over the prior two years, divided by the average share price over the prior two years.	?	SIRCA CRD
CGNINDEX	The capital gain of target shareholders calculated as the share price 20 days before the takeover announcement minus the share price two years prior. For takeovers before the introduction of CGT roll-over, the capital gain is calculated after indexing the assumed purchase price. For subsequent takeovers, the capital gain is multiplied by the capital gains discount of 50%. The calculated capital gain is divided by the share price two years prior to the takeover announcement.	?	SIRCA CRD Australian Bureau of Statistics Consumer Price Index series
*CGN20*CHANGE*	*CGN20* multiplied by a dummy variable coded as 1 for takeovers announced on or after 10 December 1999.	–	Connect 4 SIRCA Ann SIRCA CRD
CGNINDEX CHANGE*	*CGNINDEX* multiplied by a dummy variable coded as 1 for takeovers announced on or after 10 December 1999.	–	Connect 4 SIRCA Ann SIRCA CRD Australian Bureau of Statistics Consumer Price Index series

Table 1
Variable definitions and sources *(continued)*

Independent variable	Definition	Predicted sign	Data source
CHANGE	a dummy variable coded as 1 for takeovers announced on or after 10 December 1999.	?	Connect 4 SIRCA Ann
NOL	the carry forward tax loss of the acquiring firm at the financial year-end prior to the takeover announcement, multiplied by the corporate tax rate and divided by market capitalisation at the financial year-end prior to the takeover announcement.	–	FinAnalysis SIRCA CRD
TGTINST	the institutional ownership in the target firm at the financial year-end prior to the takeover announcement estimated from the Top 20 shareholders' list.	+	FinAnalysis
*TGTINST*CHANGE*	*TGTINST* multiplied by a dummy variable coded as 1 for takeovers announced on or after 10 December 1999.	–	FinAnalysis Connect 4 SIRCA Ann
TGTDE	the target firm debt-to-equity ratio calculated at the financial year-end prior to the takeover announcement.	–	FinAnalysis
BIDDE	the bidder firm debt-to-equity ratio calculated at the financial year-end prior to the takeover announcement.	–	FinAnalysis
TGTFCF	the target firm free cash flow calculated as cash flow from operations less dividends scaled by total assets. Measured at the financial year-end prior to the takeover announcement.	+	FinAnalysis
BIDFCF	the bidder firm free cash flow calculated as cash flow from operations less dividends scaled by total assets. Measured at the financial year-end prior to the takeover announcement.	+	FinAnalysis
BIDDIROWN	the percentage holding of bidding firm directors at the date of the takeover announcement as disclosed in takeover documents lodged with the ASX.	+	Connect 4 SIRCA Ann
BIDMB	the bidder firm market-to-book ratio calculated at the financial year-end prior to the takeover announcement.	–	FinAnalysis SIRCA CRD
TGTMB	the target firm market-to-book ratio calculated at the financial year-end prior to the takeover announcement.	–	FinAnalysis SIRCA CRD
TGSIZE	the target firm size measured as the natural logarithm of market capitalisation measured at the financial year-end prior to the takeover announcement.	–	FinAnalysis SIRCA CRD

Table 1
Variable definitions and sources *(continued)*

Independent variable	Definition	Predicted sign	Data source
RELSIZE	the relative size of the target firm to bidder firm calculated by dividing the target firm market capitalisation by the bidding firm market capitalisation. Market capitalisation is calculated at the financial year-end prior to the takeover.	–	FinAnalysis SIRCA CRD
TOEHOLD	the share ownership of the bidder firm in the target firm at the date of the takeover announcement disclosed in the bidding firm's documents lodged with the ASX.	+	Connect 4 SIRCA Ann
IRATE	the average corporate lending rate in the month of the takeover announcement.	–	Reserve Bank of Australia Indicator Lending Rates
DIRREC	a binary variable coded as 1 where the initial recommendation of the target firm board to shareholders is to accept the offer.	+	Connect 4 SIRCA Ann
MULTIPLE	a binary variable coded as 1 if competing takeover offers are announced for the target firm.	+	Connect 4 SIRCA Ann
Other variables			
HOLDPER	the average holding period calculated as the number of target firm shares on issue at the date of the takeover announcement divided by the average daily trading volume over the preceding two years.		Connect 4 SIRCA Ann SIRCA CRD

Table 2
Sample selection

Takeovers announced for ASX listed companies between 1996 and 2003 are included in the sample. The table identifies the reasons for the exclusion of takeovers from the final sample.

Takeovers for ASX listed targets announced between 1996 and 2003	435
Exclusions:	
Bidders not listed on the Australian Stock Exchange	198
Target firm does not disclose required information	8
Offer withdrawn prior to release of target firm statutory documents	21
Target firm has no financial information as it is listed in year of takeover	3
Bidder does not disclose required information	11
Takeovers included in model of payment method choice	194

Table 3
Payment method use and pre- and post-taxation change

This table presents method of payment use pre- and post-change to CGT on 10 December 1999. Cash and equity bids are entirely cash or equity financed. Mixed payment offers provide target shareholders with either a choice of cash or equity or a combination of cash and equity. For each row, the percentage of each payment method is presented in italics.

	Cash	*Equity*	*Mixed*	*Total*
Panel A:				
Pre-tax change				
1996	12	6	4	22
	55	*27*	*18*	*100*
1997	9	6	1	16
	56	*38*	*6*	*100*
1998	18	9	5	32
	56	*28*	*16*	*100*
1999	9	8	8	25
	36	*32*	*32*	*100*
Total	48	29	18	95
	51	*31*	*18*	*100*
Panel B:				
Post-tax change				
2000	19	12	8	39
	49	*31*	*20*	*100*
2001	12	9	3	24
	50	*38*	*12*	*100*
2002	8	8	1	17
	47	*47*	*6*	*100*
2003	10	4	5	19
	53	*32*	*26*	*100*
Total	49	33	17	99
	49	*33*	*18*	*100*

Table 4
Descriptive statistics across payment methods

This table presents means of the non-tax variables included in the logit regression model of payment choice. These variables are expected to influence the method of payment choice of acquiring firms. A univariate test of differences in means across the payment methods is also presented. Variable definitions are provided in Table 1.

	Cash (n = 97)	*Mixed (n = 35)*	*Equity (n = 62)*	*Cash v Equity*	*Cash v Mixed*	*Mixed v Equity*
Panel A: Mean for continuous variables				*t*-test	*t*-test	*t*-test
TGTDE	1.17	1.13	3.82	–0.85	0.15	–0.86
BIDDE	1.19	1.16	0.87	2.19**	0.19	1.33
TGTFCF	3.00	1.76	–4.80	3.01***	0.48	2.19**
BIDFCF	6.11	4.61	–5.16	3.01***	0.50	2.63***
BIDDIROWN	12.31	10.04	18.06	–1.88*	0.65	–2.17**
BIDMB	2.05	1.69	2.31	–0.67	1.33	–1.47
TGTMB	1.82	1.30	1.84	–0.05	1.57	–1.12
TGTSIZE	17.67	18.70	17.06	2.26**	–3.38***	5.02***
RELSIZE	0.34	0.58	1.01	–1.55	–2.10**	–0.98
IRATE	8.80	8.74	8.73	0.65	0.41	0.09
TOEHOLD	20.39	17.46	10.40	3.46***	0.81	1.93*
HOLDPER	671	741	682	–1.02	–1.21	0.97
Panel B: Proportion of binary variables coded as 1				*z*-test	*z*-test	*z*-test
DIRREC	46.39	65.71	46.77	–0.05	–1.96**	1.80*
MULTIPLE	28.87	25.71	17.74	1.59	0.36	0.93

* indicates significance at the .10 level
** indicates significance at the .05 level
*** indicates significance at the .01 level

capital gains in model (1) over the two years prior to a takeover announcement provides a reasonable approximation of the holding period for the average shareholder.

Table 5 provides summary statistics across payment types for the taxation variables incorporated in model (1). Statistics are presented separately for the period before (Panel A) and after the change to CGT (Panel B). Panel C of the table presents a statistical comparison of the variables pre- and post-taxation change. Prior to the introduction of roll-over relief, the results for the non-indexed measure of capital gains indicate that target shareholder capital gains are significantly lower in equity bids than in both cash and mixed bids. Given that shareholders were subject to CGT during this period irrespective of the form of consideration received, this finding indicates that cash or a mixed payment form was being offered to shareholders with higher capital gains for other reasons. One potential explanation is that providing shareholders with at least some amount of cash gives the shareholders a liquid asset with which to pay their taxation liability. In comparison, offering shareholders equity potentially requires the shareholder to sell the shares received to meet their taxation obligations and hence incur transaction costs. Subsequent to the introduction of capital gains roll-over relief, the results for both capital gains measures show that estimated capital gains are higher in cash offers than equity bids. These preliminary findings do not support the expectation that, after the change in regulation, equity would be offered more frequently to shareholders with greater unrealised capital gains. The results also demonstrate no difference in acquiring firm carry forward tax losses across payment types either before or after the change in taxation.

The findings presented in Panel A of Table 5 show that, before December 1999, institutional ownership in the target is significantly lower in equity bids than both other payment types. However, subsequent to the tax change, target institutional ownership in equity bids is no longer significantly different from the other payment forms. Additionally, target institutional ownership in cash takeovers is significantly lower post-change in regulation (see Panel C). These findings suggest that with post-regulation change, there is a move away from cash being used as payment where there is greater institutional ownership in the target firm. This shift in acquisition structure will allow insti-

Table 5
Comparison of tax variables before and after the change to CGT

The table presents descriptive statistics on the tax-related variables included in model (1). Panel A shows statistics pre-change in taxation, whilst Panel B shows statistics post-change in taxation. Both panels also present a *t*-test for differences across payment methods within each time period. Panel C provides a statistical test of differences within the same payment method pre- and post-regulatory change in taxation. *CGN20* is an estimate of target shareholder capital gains calculated as the share price 20 days before the takeover announcement less the average price over the prior two years, divided by the average share price over the prior two years. *CGNINDEX* is an estimate of target shareholder capital gains calculated as the share price 20 days before the takeover announcement minus the share price two years prior. For takeovers before the introduction of the CGT roll-over, the capital gain is calculated after indexing the assumed purchase price. For subsequent takeovers, the capital gain is multiplied by the capital gains discount of 50%. The calculated capital gain is divided by the share price two years prior to the takeover announcement. *TGTINST* is the institutional ownership in the target firm at the financial year-end prior to the takeover announcement estimated from the Top 20 shareholders' list. *NOL* is the carry forward tax losses of the acquiring firm at the financial year-end prior to the takeover announcement multiplied by the corporate tax rate and divided by market capitalisation at the financial year-end prior to the takeover announcement.

	Cash (*n* = 97)	*Mixed* (*n* = 35)	*Equity* (*n* = 62)	*Cash v Equity*	*Cash v Mixed*	*Mixed v Equity*
Panel A: Prior to tax change				*t*-test	*t*-test	*t*-test
CGN20	–2.47	–3.62	–25.51	2.60**	0.14	2.13**
CGNINDEX	12.50	–9.13	–15.21	1.07	1.42	0.24
TGTINST	15.73	16.95	7.58	2.64**	–0.38	2.95***
NOL	1.76	1.00	5.59	–1.51	0.95	–1.42
Panel B: After the tax change				*t*-test	*t*-test	*t*-test
CGN20	3.30	5.52	–12.72	1.92*	–0.19	1.48
CGNINDEX	–0.65	6.43	–22.13	2.27**	–0.34	1.36
TGTINST	6.27	12.34	9.53	–1.14	–2.16**	0.78
NOL	2.89	1.01	3.88	–0.39	1.27	–1.25
Panel C: Pre- vs post-t-test						
CGN20	–0.84	–0.73	–1.27			
CGNINDEX	1.00	–0.71	0.29			
TGTINST	3.79***	1.35	–0.57			
NOL	–0.80	–0.01	0.52			

*** indicates significance at the .01 level
** indicates significance at the .05 level
* indicates significance at the .10 level

tutional investors to roll over (at least in part) their CGT liability to the subsequent disposal of the shares received in the takeover.

A correlation matrix of the independent variables included in the payment choice model is provided in Table 6. As would be expected, there is a high degree of correlation between the two measures of target shareholder capital gains. For the remaining independent variables, there is significant correlation between a number of the variables. The size of the correlation, however, suggests that multi-collinearity is unlikely to be a problem in the estimation of model (1) (Gujarati, 1995: 335–336). The results for target firm size indicate that larger target firms have greater institutional ownership, higher free cash flow and attract a takeover from bidders with larger free cash flow. Acquiring firm director ownership is negatively associated with acquiring firm free cash flow, thereby suggesting an agency problem in acquiring firms (Jensen, 1986). As would be expected, a target firm is less likely to receive competing takeovers when the takeover is friendly and the bidding firm has a higher toehold.

Panel A of Table 7 presents the results of estimating the three variations of model (1) for the complete set of observations. The model is estimated in turn using each of the two measures of target shareholder capital gains. Relative to pure equity takeovers, target shareholder capital gains are found to be significantly higher in both cash bids and mixed bids. This finding is robust to the

Table 6
Correlation coefficients for the independent variables in the payment choice model. Pearson correlations are above the diagonal and Spearman are below

This table presents correlation coefficients between the independent variables included in model (1). *CGN20* is calculated as the share price 20 days before the takeover announcement less the average price over the prior two years, divided by the average share price over the prior two years. *CGNINDEX* is calculated as the share price 20 days before the takeover announcement minus the share price two years prior. For takeovers before the introduction of the CGT roll-over, the capital gain is calculated after indexing the assumed purchase price. For subsequent takeovers, the capital gain is multiplied by the capital gains discount of 50%. The calculated capital gain is divided by the share price two years prior to the takeover announcement. Other variable definitions are provided in Table 1.

	CGN20	*CGN20* CHANGE*	*CGNINDEX*	*CGNINDEX *CHANGE*	*CHANGE*	*NOL*	*TGT INST*	*TGTINST *CHANGE*	*TGTDE*	*BIDDE*
CGN20	1	.568***	.833***	.413***	0.067	–0.110	–0.062	–0.020	–0.006	0.031
*CGN20 *CHANGE*	.667***	1	.421***	.739***	0.040	–0.130*	–0.073	–0.071	–0.022	0.091
CGNINDEX	.879***	.573***	1	.548***	0.049	–0.118	–0.080	–0.033	–0.110	–0.025
*CGNINDEX *CHANGE*	.558***	.829***	.633***	1	–0.121*	–0.102	–0.047	–.154**	–0.012	0.033
CHANGE	.156**	0.037	0.105	–0.074	1	0.009	–.200***	.452***	–0.077	0.003
NOL	–0.103	–0.029	–0.083	0.001	–0.058	1	–0.107	–0.027	.511***	–0.074
TGTINST	–.156**	–0.079	–.191***	–0.095	–.212***	–.192***	1	.486***	–0.039	–0.072
*TGTINST *CHANGE*	0.083	–0.016	0.003	–.170**	.797***	–0.124*	.207***	1	–0.035	–0.034
TGTDE	–0.100	–0.104	–.174**	–0.106	–0.058	–0.055	.186***	–0.016	1	–0.049
BIDDE	–0.005	0.104	–0.024	0.111	0.022	–0.006	0.000	–0.036	.405***	1
TGTFCF	0.118	0.135*	0.072	0.104	–0.050	–0.058	.178**	0.003	.255***	.178**
BIDFCF	0.039	0.048	0.033	0.055	0.062	–0.092	.154**	0.052	.225***	.190***
BIDDIROWN	–.170**	–0.131*	–.190***	–.184**	–0.103	0.083	–.202***	–0.089	0.097	–0.026
BIDMB	0.008	–0.097	0.052	–0.044	0.037	–0.136*	0.094	0.070	0.140*	0.072
TGTMB	.158**	0.089	.232***	.173**	–0.057	0.096	–0.092	–0.033	0.076	–0.045
TGTSIZE	–0.013	0.139*	–0.005	.160**	0.108	–0.113	.449***	.286***	.156**	.177**
RELSIZE	–0.131*	0.000	–0.133*	–0.044	–.142**	0.079	0.059	–0.046	–0.105	–.240***
TOEHOLD	0.073	0.071	0.066	.142**	–0.032	–0.027	–0.094	–0.123*	.170**	.182**
IRATE	.163**	–0.026	0.141*	–0.073	.287***	–0.003	0.047	.259***	0.075	–0.004
DIRREC	0.099	0.052	0.095	0.084	.144**	–0.024	0.005	.142**	0.101	0.123*
MULTIPLE	0.106	0.041	0.082	–0.026	0.054	–.215***	–0.008	0.062	0.102	0.018

*** Significant at the 1% level
** Significant at the 5% level
* Significant at the 10% level

Table 6
Correlation coefficients for the independent variables in the payment choice model. Pearson correlations are above the diagonal and Spearman are below
(continued)

	TGTFCF	*BIDFCF*	*BIDDIROWN*	*BIDMB*	*TGTMB*	*TGTSIZE*	*REL SIZE*	*TOE HOLD*	*IRATE*	*DIRREC*	*MULTIPLE*
CGN20	0.057	0.007	–0.096	0.115	0.000	0.057	–0.141*	0.075	0.016	0.045	0.138*
*CGN20 *CHANGE*	0.090	0.035	–0.138*	0.029	–0.025	.173**	–.173**	.219***	–0.006	0.087	–0.006
CGNINDEX	–0.005	–0.017	–0.035	0.070	–0.027	–0.006	–0.111	0.073	0.018	0.055	0.126*
*CGNINDEX *CHANGE*	0.011	0.006	–0.082	–0.078	–0.020	0.069	–.171**	.240***	0.033	0.047	0.017
CHANGE	–0.080	0.059	–0.129*	0.125*	–0.075	.162**	0.019	–0.019	–0.012	.144**	0.054
NOL	–.223***	–.179**	–0.029	–0.066	.523***	–0.129*	.593***	–0.008	–0.083	–0.051	–0.134*
TGTINST	0.132*	0.049	–.178**	–0.052	–0.058	.263***	–0.008	–.143**	0.077	0.023	–0.042
*TGTINST *CHANGE*	–0.002	–0.025	–0.095	0.021	–0.040	.236***	0.026	–0.127*	0.008	0.132*	0.041
TGTDE	–0.131*	–0.054	–0.021	–0.050	.490***	–.152**	–0.003	0.045	–0.058	0.080	–0.042
BIDDE	.180**	–0.107	0.135*	0.091	–0.080	0.079	–0.115	0.128	–0.047	0.091	0.052
TGTFCF	1	.252***	–0.062	–0.015	–.155**	.353***	0.000	.142**	–0.047	–0.043	0.034
BIDFCF	.336***	1	–.173**	–0.055	–0.060	.165**	–0.068	0.079	0.090	–0.125*	0.091
BIDDIROWN	–.145**	–.175**	1	0.107	–0.039	–.308***	0.002	–0.054	–0.128*	0.114	–0.086
BIDMB	0.022	0.134*	0.033	1	–0.047*	0.081*	–0.058**	–0.056	–0.042	0.046	0.020
TGTMB	–0.111	0.108	–0.068	.204***	1	–.141**	–0.004	0.054	–0.068	0.065	–0.059
TGTSIZE	.364***	.261***	–.330***	0.134*	.252***	1	0.034	0.121*	–0.045	0.034	0.052
RELSIZE	0.040	–.257***	.199***	–.177**	0.084	.156**	1	–0.069	–0.093	–0.082	–0.088
TOEHOLD	.163**	0.136*	–0.082	–0.079	0.099	0.005	–0.090	1	0.062	.146**	–.172**
IRATE	–0.085	0.052	–.152**	0.078	–0.001	–0.027	–.146**	–0.009	1	–0.087	0.103
DIRREC	–0.066	–0.085	0.101	0.003	0.064	0.054	–0.086	0.068	–0.008	1	–.311***
MULTIPLE	0.044	0.064	–.173**	0.028	–0.114	0.015	–0.126	–0.136*	0.104	–.311***	1

*** Significant at the 1% level
** Significant at the 5% level
* Significant at the 10% level

measure used to approximate target shareholder capital gains. There is no statistical difference, however, between target shareholder capital gains in cash and mixed bids. These results are consistent with a liquidity explanation: target shareholders with a greater taxation liability require at least some cash to meet this obligation.

The negative coefficient on the interaction variables between target capital gains and the change in the taxation environment indicate a shift to equity from both cash and mixed bids. These results are, however, significant only for the unindexed capital gains interaction variable. This finding provides some evidence that shareholder level taxation is an important determinant of the corporate acquisition structure.

Inconsistent with expectations and prior studies (Erickson, 1998, and Ayers et al., 2004), we find that acquiring firms with greater carry forward losses are more likely to offer cash than both equity and mixed payment. This result is puzzling as it would be expected that firms with carry forward losses would not value the additional deductions associated with the interest payments arising from the debt financing of the takeover. The results show no association between target institutional ownership and the method of payment suggesting that institutional owners do not favour any one payment type. However, confirming the univariate results, the interaction between target institutional ownership and the change in taxation arrangements is significantly negative for model (1a). This finding indicates that acquiring firms were more likely to offer equity than cash after the change in taxation arrangements to target firms with greater institutional ownership. This suggests that bidding firms changed payment structure to allow institutions to roll over capital gains. A similar finding is reported in Ayers et al. (2004). They document a positive association between tax-free acquisitions and target institutional ownership in the US.

For the non-tax variables, the financial condition of the acquiring firm influences the payment method, with cash and mixed payment being used more frequently than equity where bidder free cash flow is higher. This result is similar to that reported in Mayer and Walker (1996) and Martin (1996). In contrast to the results in Faccio and Masulis (2005), leverage is unrelated to the method of payment with both acquiring and target firm debt-to-equity ratios having insignificant coefficients. This result suggests that the level of debt of both the target and acquiring firms at the time of the takeovers is insufficiently high to influence the method of payment choice.

Consistent with the univariate results, mixed payment is more likely to be offered in friendly takeovers and takeovers of larger target firms. Furthermore, a higher relative size of the target firm is significantly associated with a greater use of mixed payment than cash payment. These findings suggest that the target board in these takeovers has greater bargaining power allowing them to obtain a choice of payment for their shareholders. As predicted, a higher acquiring firm toehold significantly decreases the probability of an equity bid. The target firm market-to-book ratio is positively related to the probability of an equity bid, consistent with an information asymmetry explanation. This result is also consistent with greater uncertainty as to potential synergy where the value of a target firm is driven more by growth options than assets-in-place. Competing bidders and the ownership of the acquiring firm board are not associated with payment method. The insignificant coefficient on the acquiring firm market-to-book ratio does not support the argument that overvalued firms will be more likely to offer equity. A potential explanation for this finding is that this variable does not adequately measure acquiring firm overvaluation. Although the coefficient on the prevailing interest rate is negative, it is insignificant in all variants of model (1). A possible explanation for this finding is that, over the period of the study, the corporate interest rate moved in a narrow range between 8% and 10.5%.

A limitation with the estimation of model (1) is that the calculation of capital gains assumes target shareholders have owned their shares for two years. To assess the impact of this assumption, model (1) is re-estimated using only those targets where the calculated holding period is less than three years. This holding period comprises approximately 75% of the sample. These results are presented in Panel B of Table 7. For model (1a), the results on the interaction variable between target capital gains and the change in the taxation environment are now significantly negative using both the indexed and non-indexed capital gains measures. This finding indicates that, subsequent to the regulatory change, acquiring firms were more likely to offer equity than cash to target shareholders with higher capital gains. This result provides additional support for the importance of target shareholder CGT on corporate acquisition structure. The results for model 1(b) remain significant only for the unindexed capital gains interaction variable.

The conclusions on the remaining variables largely remain unchanged from those presented in Panel A for the full set of acquiring firms. Target institutional ownership is now, however, positive and significant in model (1a) indicating that cash is more likely to be offered in takeovers with higher institutional ownership. This result is consistent with institutions having a lower marginal tax rate than individual shareholders. Additionally, the size

Table 7
Results of estimating logit regression model of the method of payment choice

Model (1) examines the impact of the change in CGT arrangements on the payment method used in takeovers. The dependent variable is a binary variable denoting takeovers where the payment method is: exclusively cash (models 1a and 1c) and a mixed payment form (model 1b). *CGN20* is an estimate of target shareholder capital gains calculated as the share price 20 days before the takeover announcement less the average price over the prior two years, divided by the average share price over the prior two years. *CGNINDEX* is an estimate of target shareholder capital gains calculated as the share price 20 days before the takeover announcement minus the share price two years prior. For takeovers before the introduction of the CGT roll-over, the capital gain is calculated after indexing the assumed purchase price. For subsequent takeovers, the capital gain is multiplied by the capital gains discount of 50%. The calculated capital gain is divided by the share price two years prior to the takeover announcement. The model also includes other variables expected to be associated with the payment method choice of acquiring firms. Other variable definitions are provided in Table 1 (*t*-statistics are shown in parentheses).

Panel A: Full sample

	Cash vs Equity (1a)	*Cash vs Equity (1a)*	*Mixed vs Equity (1b)*	*Mixed vs Equity (1b)*	*Cash vs Mixed (1c)*	*Cash vs Mixed (1c)*
Intercept	0.7746 (0.21)	–0.1700 (–0.05)	–15.4660 (–2.29)**	–16.9010 (–2.51)**	10.3500 (2.36)**	10.5920 (2.44)**
CGN20	2.4991 (2.63)***	–	5.9298 (2.50)**	–	–0.8071 (–0.65)	–
*CGN20*CHANGE*	–2.0078 (–2.15)**	–	–5.0307 (–1.97)**	–	0.1593 (0.10)	–
CGNINDEX	–	0.7294 (2.19)**	–	2.1296 (2.53)**	–	0.3985 (0.62)
*CGNINDEX*CHANGE*	–	–0.1919 (–0.26)	–	–1.5077 (–1.51)	–	–0.7943 (–0.88)
CHANGE	–0.1422 (–0.24)	0.3471 (0.61)	–1.3658 (–1.09)	–0.9819 (–0.88)	1.1865 (1.51)	1.3056 (1.63)
NOL	5.7428 (1.74)*	6.4874 (1.72)*	16.3960 (1.44)	14.4540 (1.36)	19.4310 (1.90)*	20.5060 (1.97)**
TGTINST	3.5737 (1.36)	6.7614 (1.62)	7.9307 (1.56)	6.7647 (1.47)	2.5311 (0.87)	3.5045 (1.11)
*TGTINST*CHANGE*	–6.0990 (–1.66)*	–6.7614 (–1.84)*	–6.2720 (–1.12)	–5.5174 (–1.03)	–4.6593 (–1.00)	–5.7079 (–1.19)
TGTDE	0.1400 (1.28)	0.1715 (1.41)	0.1892 (0.51)	0.0790 (0.23)	–0.0626 (–0.23)	–0.0227 (–0.08)
BIDDE	0.3333 (1.39)	0.2825 (1.19)	–0.2361 (–0.51)	–0.2371 (–0.57)	–0.0764 (–0.23)	–0.0570 (–0.17)
TGTFCF	0.8024 (0.51)	1.4100 (0.89)	–5.0326 (–1.55)	–4.9363 (–1.51)	2.9429 (1.25)	2.4694 (1.08)
BIDFCF	2.1961 (2.00)**	2.0617 (1.89)*	5.9845 (1.79)*	7.2219 (1.97)**	–0.2031 (–0.11)	–0.3201 (–0.18)
BIDDIROWN	–0.8999 (–0.77)	–0.7265 (–0.63)	–0.2375 (–0.10)	–0.1126 (–0.05)	–0.0626 (–0.04)	–0.0022 (–0.01)
BIDMB	–0.1117 (–1.14)	–0.1018 (–1.03)	–0.0728 (–0.46)	–0.0574 (–0.38)	0.3173 (1.58)	0.3083 (1.51)
TGTMB	–0.1531 (–1.67)*	–0.1805 (–1.68)*	–0.5582 (–2.04)**	–0.7535 (–2.39)**	0.3230 (1.14)	0.2461 (0.76)

Table 7
Results of estimating logit regression model of the method of payment choice *(continued)*

Panel A: Full sample *(continued)*

	Cash vs Equity (1a)	*Cash vs Equity (1a)*	*Mixed vs Equity (1b)*	*Mixed vs Equity (1b)*	*Cash vs Mixed (1c)*	*Cash vs Mixed (1c)*
TGTSIZE	0.1348	0.1077	1.1622	1.1453	–0.5774	–0.5426
	(0.87)	(0.68)	(3.54)***	(3.64)***	(–3.07)***	(–2.92)***
RELSIZE	–0.3603	–0.3702	–0.8813	–0.7673	–0.8009	–0.8065
	(–1.27)	(–1.30)	(–1.11)	(–1.08)	(–1.78)*	(–1.81)*
TOEHOLD	3.0519	3.2179	6.0179	5.4593	1.4244	1.7317
	(2.17)**	(2.33)**	(2.41)**	(2.35)**	(1.03)	(1.25)
IRATE	–3.5660	–2.4765	–4.7179	–5.2280	–1.9122	–1.2617
	(–1.19)	(–0.87)	(–1.37)	(–1.05)	(–0.06)	(–0.41)
DIRREC	0.2715	0.2715	1.8946	1.9690	–0.9015	–0.9779
	(0.61)	(0.62)	(2.28)**	(2.46)**	(–1.66)*	(–1.77)*
MULTIPLE	0.7649	0.8840	0.5038	0.5576	0.0352	–0.0202
	(1.45)	(1.32)	(0.61)	(0.68)	(0.06)	(–0.03)
N	159	159	97	97	132	132
Log-likelihood ratio	52.15***	49.71***	60.05***	56.86***	33.28**	33.45**
McFadden R^2	0.2452	0.2338	0.4734	0.4482	0.2180	0.2191
% Classified correctly	77.99	76.99	88.66	87.63	80.30	81.06

*** indicates significance at the .01 level
** indicates significance at the .05 level
* indicates significance at the .10 level

Panel B: Target firms with holding periods between 0–3 years

	Cash vs Equity (1a)	*Cash vs Equity (1a)*	*Mixed vs Equity (1b)*	*Mixed vs Equity (1b)*	*Cash vs Mixed (1c)*	*Cash vs Mixed (1c)*
Intercept	–2.8950	–4.6272	–18.5910	–20.2430	8.1341	8.6020
	(–0.21)	(–0.89)	(–1.18)	(–1.34)	(1.50)	(1.55)
CGN20	2.0657	–	7.0907	–	–0.7169	–
	(2.18)**		(2.06)**		(–0.43)	
*CGN20*CHANGE*	–1.8937	–	–3.3686	–	0.2242	–
	(–1.96)**		(–2.13)**		(0.11)	
CGNINDEX	–	0.9095	–	2.2161	–	0.2836
		(2.14)**		(1.82)*		(0.32)
*CGNINDEX*CHANGE*	–	–1.4937	–	1.3476	–	–0.6778
		(–1.97)**		(0.29)		(–0.64)
CHANGE	0.6404	0.6827	4.4935	3.6351	0.4628	0.6283
	(0.92)	(0.96)	(1.00)	(0.97)	(0.46)	(0.59)
NOL	3.2030	6.3784	75.5990	56.8080	12.0510	12.4230
	(1.71)*	(1.70)*	(1.95)*	(1.69)*	(1.98)**	(1.68)*
TGTINST	5.9386	5.8576	31.2080	23.3890	5.0802	6.6833
	(1.79)*	(1.76)*	(1.54)	(1.45)	(1.00)	(1.16)
*TGTINST*CHANGE*	–7.6933	–9.0920	–16.7290	–10.6180	–7.2211	–8.8829
	(–1.69)*	(–1.86)*	(–1.00)	(–0.65)	(–1.17)	(–1.32)

Table 7
Results of estimating logit regression model of the method of payment choice *(continued)*

Panel B: Target firms with holding periods between 0–3 years *(continued)*

	Cash vs Equity (1a)	*Cash vs Equity (1a)*	*Mixed vs Equity (1b)*	*Mixed vs Equity (1b)*	*Cash vs Mixed (1c)*	*Cash vs Mixed (1c)*
TGTDE	0.0505	0.2846	1.3584	1.1728	–0.5197	–0.4830
	(0.41)	(1.65)	(1.62)	(1.57)	(–1.49)	(–1.36)
BIDDE	0.2829	0.3024	–2.6984	–2.4443	0.2393	0.2603
	(1.04)	(1.11)	(–2.28)**	(–2.06)**	(0.59)	(0.64)
TGTFCF	0.8015	0.6129	5.2195	5.2167	1.3940	1.0526
	(0.46)	(0.33)	(0.64)	(0.64)	(0.63)	(0.47)
BIDFCF	1.8816	1.7406	12.9900	14.5100	0.4275	0.3250
	(1.67)*	(1.75)*	(1.75)*	(1.68)*	(0.17)	(0.14)
BIDDIROWN	–0.6727	–1.0306	4.8136	6.0542	0.5679	0.6717
	(–0.46)	(–0.70)	(0.92)	(1.04)	(0.30)	(0.36)
BIDMB	–0.2052	–0.2876	–0.1887	–0.2102	0.2237	0.2217
	(–1.63)	(–2.30)**	(–0.83)	(–0.84)	(0.96)	(0.95)
TGTMB	–0.0696	–0.2850	–1.4150	–1.4632	0.2864	0.2840
	(–1.75)*	(–1.93)*	(–2.12)**	(–2.43)**	(1.26)	(1.05)
TGTSIZE	0.1166	0.2543	2.3292	2.3143	–0.5724	–0.5558
	(0.58)	(1.18)	(2.27)**	(2.05)**	(–2.73)***	(–2.59)**
RELSIZE	–0.2386	–0.3368	–3.4104	–3.1786	–0.7073	–0.7102
	(–0.86)	(–1.78)*	(–1.33)	(–1.22)	(–1.89)*	(–1.69)*
TOEHOLD	7.1373	7.1711	8.1370	36.0010	–2.0972	–1.9202
	(2.55)**	(2.60)***	(2.19)**	(1.98)**	(–1.04)	(–0.95)
IRATE	1.0421	–4.3759	–3.6974	–3.4115	3.1898	2.0013
	(0.03)	(–0.11)	(–1.46)	(–1.04)	(0.63)	(0.38)
DIRREC	0.4821	0.6649	4.5187	4.6254	–0.7595	–0.7400
	(0.87)	(1.15)	(2.15)**	(1.91)*	(–1.74)*	(–1.68)*
MULTIPLE	0.6222	0.6428	–1.3295	–0.5189	0.4223	0.4129
	(1.03)	(1.05)	(–0.75)	(–0.27)	(0.53)	(0.53)
N	120	120	71	71	101	101
Log-likelihood ratio	42.70***	46.22***	66.23***	56.86***	30.09*	30.19*
McFadden R^2	0.2827	0.3059	0.6295	0.5969	0.2763	0.2773
% Classified correctly	77.88	77.45	85.65	84.20	80.85	79.79

*** indicates significance at the .01 level
** indicates significance at the .05 level
* indicates significance at the .10 level

of carry forward tax losses is now positive and significant in the three variations of model (1). This finding is inconsistent with predictions. The bidding firm market-to-book ratio is negative and significant in model (1a) using the indexed capital gain. This result provides limited support that overvalued acquiring firms offer equity consideration. Higher acquiring firm leverage is found to increase significantly the probability of an equity bid relative to a mixed bid. Although this is consistent with higher levered firms avoiding debt, the insignificant finding for this variable in model (1a) suggests this result must be viewed with caution. The significant negative coefficient on the relative size of the target in model (1a) when the indexed capital gain is used provides additional support that information asymmetry leads to the use of equity payment.

4.1. Additional analysis

Target firm institutional ownership and capital gains

The results in Table 7 indicate a shift after December 1999 from cash to equity payment for takeovers with higher target institutional ownership. To determine if this change is associated with the size of target shareholder capital gains, model 1(a) is re-estimated for the two measures of capital gains after including an additional interaction variable between *TGTINST*CHANGE* and, respectively, each measure of capital gains. The coefficient on this additional variable is insignificant, whilst the conclusions drawn from the other variables remained unchanged.

Acquiring firm overvaluation

As the acquiring firms' market-to-book ratio is generally insignificant in the estimation of model (1), the findings presented provide little support that acquiring firm overvaluation results in bidding firms offering equity as payment. As an additional measure of acquiring firm overvaluation, we calculate the buy-and-hold abnormal return (BHAR) for bidding firms over the period commencing two years before the takeover announcement and ending two months prior to the takeover announcement.[11] Abnormal returns are calculated by subtracting the return on the All Ordinaries Accumulation Index from sample firm returns. Each variant of model (1) is then re-estimated with this additional variable. The coefficients on BHAR are insignificant in all the regression models.

Inside ownership

Inconsistent with expectations, we do not find any evidence that acquiring firm directors offer cash as payment to avoid diluting their stake in the acquiring firm. As Martin (1996) and Faccio and Masulis (2005) find insider ownership is only associated with payment choice at medium levels of ownership, we re-estimate model (1) after replacing *BIDDIROWN* with a spline variable. Similar to Martin (1996), low ownership is defined as a stake of less than 5%, medium ownership is a stake of 5% to 25% and high ownership is a stake of greater than 25%. The results (not tabulated) provide only limited support that insider voting rights influence the payment method choice. Acquiring firms with directors' ownership below 5% are significantly more likely (1% level) to offer equity than cash (model 1(a)) and equity than mixed payment (model 1(b)) when capital gains are defined on an unindexed basis. The coefficients on the medium and high ownership levels are insignificant indicating that the dilution of existing ownership rights is not an issue for bidding firm management with higher levels of ownership. The results on all other variables are similar to those shown in Table 7.

Method of payment and takeover outcome

Henry (2004) provides a comprehensive study of factors that influence outcome in Australian takeovers. The results of the study show no association between payment method and the successful completion of a takeover offer. For the takeovers included in the method of payment choice tests, we prepare a contingency table as a simple test of the association between the payment method and the takeover outcome. Similar to Henry (2004), we cannot reject the null hypothesis of no association between the takeover outcome and the payment form ($\chi^2_{2df} = 1.12$).

5. Conclusions and future research

It has been commonly hypothesised that shareholder-level taxation is an important determinant of the form of consideration offered in corporate acquisitions. Prior studies in both Europe and the US, however, have been unable to document an association between the size of target shareholder capital gains and payment method. Taking advantage of a change to the CGT arrangements in Australia, this study provides a direct test of the influence of shareholder level taxation on the method of payment choice in takeovers.

Confirming the importance of shareholder level taxation in the structure of corporate acquisitions, we find a significant association between estimates of target shareholder capital gains and the payment form offered after the removal of the immediate taxation of scrip-for-scrip exchanges in December 1999. The results are, however, sensitive to the proxy used to estimate capital gains. Our results using an unindexed measure of capital gain show a shift in acquisition structure for both the full set of observations and those target firms

[11] Abnormal returns are measured only until two months before the takeover announcement to ensure that any information leakage surrounding the takeover is excluded.

that have an average holding period of less than three years. When we estimate capital gains using an indexed measure, we only document a shift from cash to equity payment for target firms that have an average holding period of three years or less. This study also documents that higher institutional ownership in a target firm leads to a reduction in cash takeovers in favour of equity payment subsequent to the regulatory change. This is consistent with acquiring firms offering a payment form that allows institutional owners to defer CGT.

Future research investigating the influence of target shareholder capital gains on acquisition structure may consider using a survey of acquiring firms or takeover advisers to obtain greater appreciation of the importance of target shareholder taxation in choosing a payment form. For example, such a survey can establish the importance and ranking of target shareholder capital gains as a factor that bidding firms consider when choosing a payment method. Additionally, the method employed by acquiring firms to calculate target shareholder capital gains and the assumed holding period of target shareholders can be more specifically determined.

In addition to investigating the influence of target shareholder taxation on payment method, this study adds to prior research in Europe and the US on factors that influence the method of payment choice. The study shows that target firms with a higher market-to-book ratio are more likely to be offered equity. This finding is consistent with these target firms having a higher degree of information asymmetry and more uncertainty as to potential synergies. Furthermore, we document that acquiring firms with greater free cash flow and a higher toehold stake are less likely to offer equity consideration. Finally, a mixed payment type is more frequently offered when the target firm is larger and the takeover is friendly. This result is consistent with these target firms having greater negotiating power in relation to the bidding firm, thereby allowing them to negotiate a mixed payment type for their shareholders.

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